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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/628,153

07/28/2003

Christian Bonnet

Serie 6034

4378

7590

08/10/2006

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EXAMINER

ELVE, MARIA ALEXANDRA

ART UNIT

PAPER NUMBER

1725

DATE MAILED: 08/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Final office Action
Rsp. due

10-10-06 (1 Date)

O. Pittis

M. Marajo

RECEIVED

AUG 15 2006

INTELLECTUAL PROPERTY
HOUSTON, TX

Office Action Summary

Application No.

10/628,153

Applicant(s)

BONNET ET AL.

Examiner

M. Alexandra Elve

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18, 20-39, 42 and 46-51 is/are pending in the application.
- 4a) Of the above claim(s) 48, 49 and 51 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18, 20-39, 42, 46, 47 and 50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 18, & 20-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Quaas et al. (USPN 3,392,017).

Quaas et al. discloses welding which uses a copper based alloy that also contains tin (4-25%) and phosphorous (0.1-1%), the balance being copper. The copper based alloy is deposited using a variety of welding processes, such as carbon arc, oxy-fuel, tungsten inert gas, atomic hydrogen welding open arc-welding and so forth. Examples include copper tube and wire. Composition examples are: 1 to 17% copper base alloy containing 7.5% phosphorus and 22 to 69% copper base alloy containing 18% tin. The core wire can be of a metal such as, pure copper or tin bronze alloy.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 35-38 & 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quaas et al. as stated in the above paragraph and further in view of Davidian et al. (USPN 6,347,662).

Quaas et al. does not teach forming a heat exchanger in the arc welding process.

Davidian et al. discloses a heat exchanger comprised of a plurality of plates made of copper, aluminum or stainless steel. The exchanger is made of a stack of vertical and parallel rectangular plates between which spacer corrugations that also form fins are interposed. Each pair of plates delimits a passage of flat overall shape. These plates are attached using a brazing filler material. The exchanger can be used for exchanging heat between at least two fluids in an air separation unit and can be used cryogenically.

It would have been obvious to one of ordinary skill in the art at the time of the invention to direct the welding process, as taught by Quaas et al. to the Davidian et al. heat exchanger because this is merely an application of the arc welding process.

Claims 39, 42 & 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davidian et al. and further in view of Quaas et al. or Clarke (USPN 4,423,618) or Harris (USPAP 2003/0021717 A1).

Davidian et al. discloses a heat exchanger comprised of a plurality of plates made of copper, aluminum or stainless steel. The exchanger is made of a stack of vertical and parallel rectangular plates between which spacer corrugations that also

form fins are interposed. Each pair of plates delimits a passage of flat overall shape. These plates are attached using a brazing filler material. The exchanger can be used for exchanging heat between at least two fluids in an air separation unit and can be used cryogenically.

Davidian et al. does not specifically teach the presence of phosphorus.

Quaas et al. discloses welding which uses a copper based alloy that also contains tin (4-25%) and phosphorous (0.1-1%), the balance being copper. The copper based alloy is deposited using a variety of welding processes, such as carbon arc, oxy-fuel, tungsten inert gas, atomic hydrogen welding open arc-welding and so forth. Examples include copper tube and wire.

Clark discloses brazing of heat exchangers using phosphorous bearing copper filler metal.

Harris discloses a phosphorous-copper-antimony-tin braze for making ductile brazes in heat exchangers.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a phosphorous-copper braze as taught by Quaas et al. or Clark or Harris, in the Davidian et al. system because of the ductile joints which the braze produces.

Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davidian et al. and further in view of Quaas et al.

Davidian et al. discloses a heat exchanger comprised of a plurality of plates made of copper, aluminum or stainless steel. The exchanger is made of a stack of vertical and parallel rectangular plates between which spacer corrugations that also form fins are interposed. Each pair of plates delimits a passage of flat overall shape. These plates are attached using a brazing filler material. The exchanger can be used for exchanging heat between at least two fluids in an air separation unit and can be used cryogenically.

Davidian et al. does not teach the use of copper/tin braze.

Quaas et al. discloses welding which uses a copper based alloy that also contains tin (4-25%) and phosphorous (0.1-1%), the balance being copper. The copper based alloy is deposited using a variety of welding processes, such as carbon arc, oxy-fuel, tungsten inert gas, atomic hydrogen welding open arc-welding and so forth. Examples include copper tube and wire.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a Cu-Sn-P brazing filler material as taught by Quaas et al. in the Davidian et al. heat exchanger production because it is merely a variation of an already required brazing component.

Response to Amendment

The amendment filed 5/22/06 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment

shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the specification does not have support for "phosphorous".

Applicant is required to cancel the new matter in the reply to this Office Action.

Response to Arguments

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See US PTO-892.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Alexandra Elve whose telephone number is 571-272-1173. The examiner can normally be reached on 6:30-3:00 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 5710272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

August 6, 2006.



M. Alexandra Elve
Primary Examiner 1725

Notice of References Cited	Application/Control No. 10/628,153		Applicant(s)/Patent Under Reexamination BONNET ET AL.	
	Examiner M. Alexandra Elve		Art Unit 1725	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-4,423,618	01-1984	Clarke, John P.	72/370.07
*	B	US-2003/0021717	01-2003	Harris, Joseph W.	420/472
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

* A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.